

WHAT IS CLAIMED IS:

1. A polyurethane prepolymer having an NCO content of from about 1 to about 6% by weight, prepared by reacting:

- 5           A)     an isocyanate selected from the group consisting of
- i)     an aliphatic and/or a cycloaliphatic isocyanate,
  - ii)    a mixture of an aromatic isocyanate and an aliphatic and/or a cycloaliphatic isocyanate,
- 10           B)     a di- or polyhydroxy compound having a number average molecular weight of from 700 to about 16,000, and
- C)     optionally, a dihydroxy and/or polyhydroxyl compound having a number average molecular weight of less than 700, with the provisos that
- 15           a)     at least one of components A), B or C) has a functionality of more than 2 and
- b)     if both component A) and component B) are difunctional, component C) cannot be a trihydroxy component of the formula:
- $$R-(OH)_3$$
- 20           where R is a saturated straight chain or branched chain aliphatic group of from 2 to 8 carbon atoms.

2. The prepolymer of Claim 1 wherein component B) at least 60 wt.% of at least one polyoxypropylene glycol.

25           3. The prepolymer of Claim 1 wherein component A) comprises (1) from 5 to 50 wt.% of an aliphatic and/or cycloaliphatic isocyanate and (2) from 50 to 95 wt.% of an aromatic diisocyanate.

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terminal group content of less than or equal to 0.02 milliequivalents per gram polyol.

5           5.       The prepolymer of Claim 1 wherein component B) is a polyether polyol based on at least one polyoxypropylene diol having a number average molecular weight of from about 1000 to about 8000 dalton and having an unsaturated terminal group content of less than or equal to 0.02 milliequivalents per gram polyol.

10           6.       The prepolymer of Claim 1 wherein component C) is a polyether triol.

            7.       The prepolymer of Claim 1 having an NCO content of from about 2 to about 4% by weight.

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            8.       An aqueous polyurethane dispersion comprising the prepolymer of Claim 1 and

            D)       a compound having an anionic or potentially anionic group and two groups which are reactive to isocyanate groups

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and

            E)       a chain extender having two amine groups which are reactive with isocyanate groups.

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            9.       A polyurethane film produced from the prepolymer of Claim 1.

            10.      A polyurethane film which is resistant to isopropanol produced from the prepolymer of Claim 1.

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11. A polyurethane glove or condom produced from the prepolymer of Claim 1.